

**INVENTION ALERT FORM**

TO: Galle Bailey M/S 2061/Extension 32724

**ALERT NO:** \_\_\_\_\_

Date: &lt;date&gt; \_\_\_\_\_

**CIRCLE ONLY ONE FROM TOP ROW REQUIRED FIELD:-**

EPV SUBSTRATE	WCVD / 2491	CMP 1399	METAL 0881	CPS 0676	CORE ENG 0793	COPPER 2492	AKT	ATD 130	APD	FET 3037	HDR/CVD 0281	CONDUCTIVE 1177	MMCS/ APC	ETEC
OXD 3365	TVTIN 2492		SILICON 0916	SMO/ GAS 1649	EPS 2590	ALUMINUM 2491	EBT		CDSEM 3047	MDR/DSI 0166	BCVD 1155	PARAMETRIC	MMCS/ APC	RT
LPCVD 3365	ALD		DIELECTRIC/ NIE 0521	SMO/ PUMP 1651	DT 2492	LINER/ BARRIER 2492		WF		LOW K 2445	ORION/CON 2471	ORION/CON 2471	MMCS/ Modular Controller 3413	
GCM 3365			DIELECTRIC/ ICP 0521	EPIC 2442		Copper Plating(EEP) 2492			DRSEM 2445	ELK 2445	ORION/AR 2471	ORION/AR 2471	SmartSys	
WBT CLEAN 3365			CONDUCTOR	SCALPEL 0894					QEMI				PDC-DSI 3396	
PMD 3365			CHAMBER TECH 0894	CONSILIUM 2199					ICT					
OTHER 3365			CORE TECH	ECOM 1245					EPI					
						COPPER				Dual Dam				

Title of Invention (please print clearly): Tight wafer pocket heater for Bevel edge deposition reduction.

**COMPUTER ENTERED**  
<date> \_\_\_\_\_

0008295

2. Inventors Names only (please print clearly and provide complete information at Section 2.)

Mark A. Fodor, Sophia Velastegui, Sonyo Sen, Visweswaran Sivaramakrishnan, Peter Lee, Dave Silvestri

BH

Please use separate attachments for any answers that don't fit on the form, especially for questions 3-8. If the answer to a question is "NONE", please write "NONE" rather than leaving the answer blank.

3. Earliest dates and model names of all Applied products incorporating the invention which have been offered for sale or are expected to be offered for sale:

Invention is potentially applicable to all Producer Platforms equipped with any PECVD, LOW-K or SACVD type deposition process chambers. The earliest expected "offer for sale date" could be as early as <04/15> . Of lesser importance the invention is also potentially applicable to any Centura Platform equipped with any DxZ type PECVD or SACVD process chamber.

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4. If the invention has been demonstrated or described to persons other than Applied employees, for each disclosure please provide the earliest date, name of company, a brief description of what was disclosed and the purpose of the disclosure. Attach a copy of any related non-disclosure agreements:

5. If future disclosures like those in Question #4 are expected to occur within the next 12 months, please provide the anticipated date, type of information to be disclosed, and purpose of the disclosure:  
NONE [ ]

None that we know of.

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6. Describe any other known designs or processes, whether actually implemented or merely proposed in a publication, which could be considered similar to your invention or which constitute the state-of-the-art improved upon by your invention: If described in a publication, attach a copy of same or provide a citation.

None that we know of.

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7. List each feature of the invention which you consider novel and non-obvious. Describe the advantages of each novel feature in comparison with the state-of-the-art approaches which are most similar to your invention:

- (1) A wafer pocket whose inside diameter is designed such that it is as proximate as possible to the wafer edge.
- (2) A wafer pocket lip profile that is at least  $\frac{1}{2}$  wafer thickness in height perpendicular to the wafer pocket, tapering outward and upward at an angle steep enough and high enough to ensure wafer capture upon transfer.
- (3) A wafer pocket described in 7(1) and 7(2) that, outside of the wafer capture area, tapers down to the level of the plane of the wafer pocket.
- (4) A wafer pocket described in 7(1), 7(2) and 7(3) that separates the functionality of wafer bevel edge deposition reduction using a continuous geometry completely around the wafer and the functionality of wafer capture using discreet tapered crowns or other suitable features arrayed around the wafer.

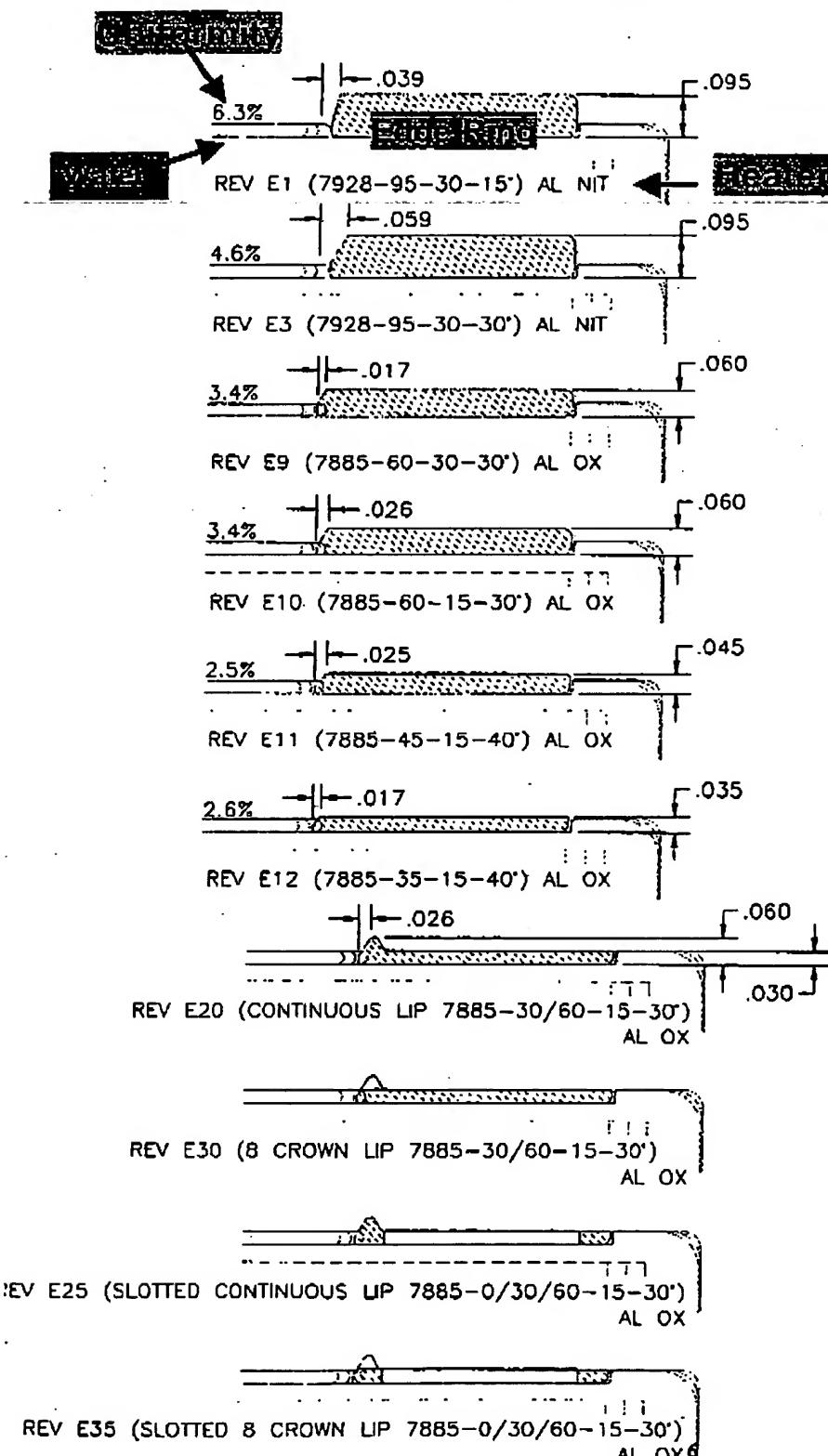
8. Describe the invention, preferably with reference to attached drawings:

The invention is either a heater or an edge ring sitting on a heater that embodies the features described in section 7. Sheet 6 depicts the edge rings Rev E9 through E12 having embodiments described in 7(1) and 7(2). Rev E35 edge ring depicted on Shts 6 and 7 is a test bed edge ring having the embodiments described in sections 7(1) through 7(4).

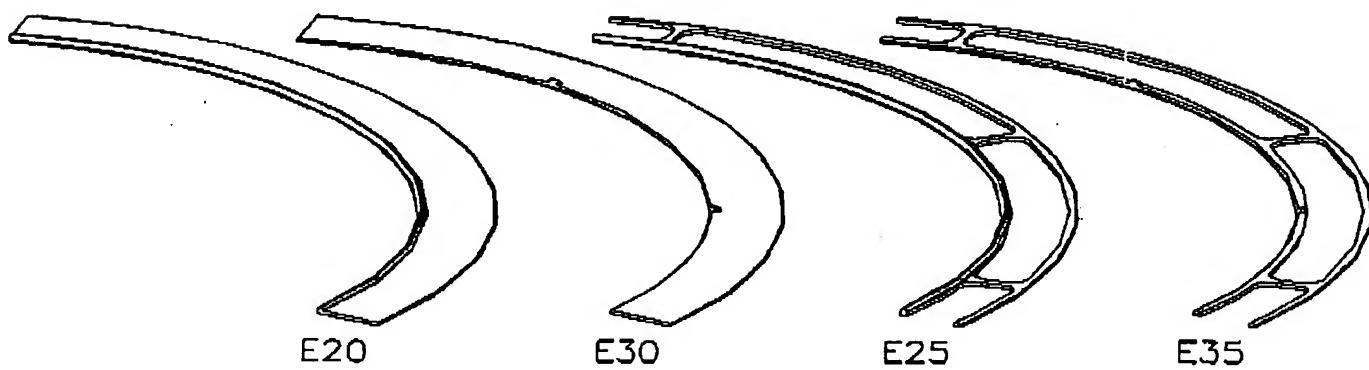
Sheet 8 depicts a tight pocket heater containing embodiments described in sec 7(1) and 7(4). Based upon the film uniformity trends documented on Sheet 5, and pending test results of the Rev E35 edge Ring, it is believed that this heater would reduce bevel edge deposition and deliver acceptable film uniformities. Sheet 9 is a graphical depiction of wafer bevel edge deposition on a standard heater. Sheet 10 shows reduced bevel edge deposition using the E11 and E12 edge rings.

ATTACH ADDITIONAL SHEETS TO DESCRIBE INVENTION AS NEEDED

## INVENTION ALERT FORM

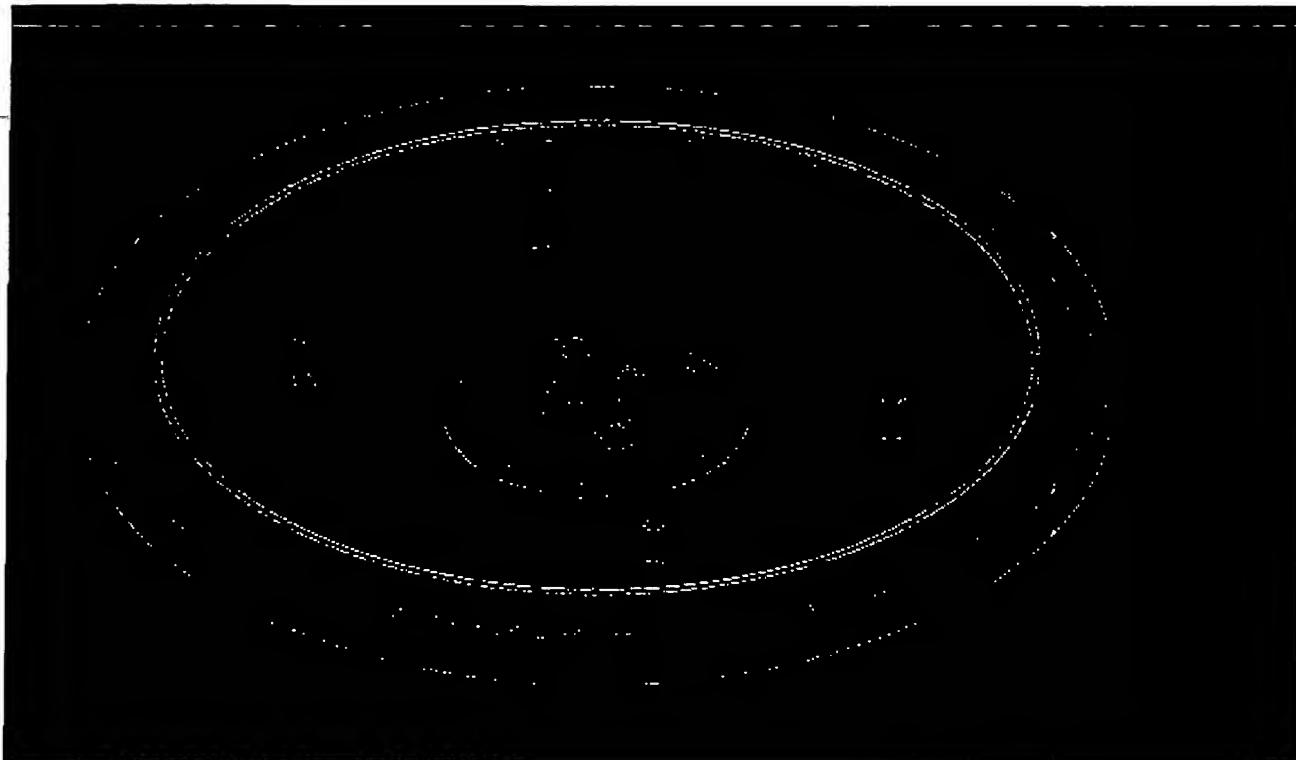
Different forms of Edge Rings :

## INVENTION ALERT FORM

**Different form of edge Rings ( Isometric Views):**

INVENTION ALERT FORM

**Tight Pocket Heater for Bevel Edge Deposition Reduction and Optimum film deposition thickness uniformity.**



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## INVENTION ALERT FORM

Provide the following information for EACH inventor\*\* REQUIRED FIELDS:

**Inventor #1:**Legal Name: Mark A Fodor Employee # \_\_\_\_\_ Mail Stop \_\_\_\_\_

Work Phone \_\_\_\_\_

Job Title: \_\_\_\_\_

Citizenship: \_\_\_\_\_

&lt;CONFIDENTIAL&gt;

Complete Home Address: \_\_\_\_\_

Manager: \_\_\_\_\_

Div. Manager \_\_\_\_\_

Product Group: \_\_\_\_\_

**Inventor #2:**Legal Name: SOPHIA VELASQUEZ Employee # \_\_\_\_\_ Mail Stop \_\_\_\_\_

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Job Title: \_\_\_\_\_

Citizenship: \_\_\_\_\_

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Div. Manager \_\_\_\_\_

Product Group: \_\_\_\_\_

**Inventor #3:**Legal Name: Soovo Sen Employee # \_\_\_\_\_ Mail Stop \_\_\_\_\_

Work Phone \_\_\_\_\_

Job Title: \_\_\_\_\_

Citizenship: \_\_\_\_\_

&lt;CONFIDENTIAL&gt;

Home Address: \_\_\_\_\_

Manager \_\_\_\_\_

Div. Manager \_\_\_\_\_

Product Group: \_\_\_\_\_

## INVENTION ALERT FORM

FOR ADDITIONAL INVENTORS, PLEASE COMPLETE AND ATTACH ADDITIONAL SHEET AS NEEDED.

## ADDITIONAL INVENTORS:

<u>Inventor #</u> :	<u>VISWESWARAN SIVARAKKIRICHANAN</u>	
Legal Name:	<u>VISWESWARAN SIVARAKKIRICHANAN</u>	Employee #
Work Phone	_____	
Job Title:	_____	
Citizenship	<u>&lt; CONFIDENTIAL &gt;</u>	
Home Address	_____	
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Div. Manager	_____	
Product Group:	_____	

<u>Inventor #</u> :	<u>PETER LEE</u>	Employee #
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Div. Manager	_____	
Product Group:	_____	

<u>Inventor</u>	<u>DAVE SILVETTI</u>	Employee #
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Home Address	_____	
Manager	_____	
Div. Manager	_____	
Product Group:	_____	

## INVENTION ALERT FORM

10. Signature, date and PRINTED name of each inventor plus two witnesses who have read and understood this Invention Alert form:

## Inventors:

<u>Mark A Fodor</u>	<u>&lt;DATE&gt;</u>	<u>mark A Fodor</u>
Printed Name	Date	Signature
<u>SOPHIA M. VELASQUEZ</u>	<u>&lt;DATE&gt;</u>	<u>Sophia M. Velasquez</u>
Printed Name	Date	Signature
<u>SOOVO SEN</u>	<u>&lt;DATE&gt;</u>	<u>Soovo Sen</u>
Printed Name	Date	Signature
<u>PETER LEE</u>	<u>&lt;DATE&gt;</u>	<u>Peter Lee</u>
Printed Name	Date	Signature
<u>V SIVA</u>	<u>&lt;DATE&gt;</u>	<u>V Siva</u>
Printed Name	Date	Signature
<u>DAVE SILVETTI</u>	<u>&lt;DATE&gt;</u>	<u>Dave Silvetti</u>
Printed Name	Date	Signature

## Witness:

<u>Cheryl Taypon</u>	<u>&lt;DATE&gt;</u>	<u>Cheryl Taypon</u>
Printed Name	Date	Signature
<u>Dian Syarifah</u>	<u>&lt;DATE&gt;</u>	<u>Dian Syarifah</u>
Printed Name	Date	Signature

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